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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/397,550	09/16/1999	JASON PETER BROWN	A0000180-66-	8892
28880	7590	10/27/2003	EXAMINER	
WARNER-LAMBERT COMPANY			MURPHY, JOSEPH F	
2800 PLYMOUTH RD			ART UNIT	
ANN ARBOR, MI 48105			PAPER NUMBER	

1646
DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/397,550	Applicant(s) BROWN ET AL.	
	Examiner Joseph F Murphy	Art Unit 1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-4, 10-12 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4, 10-12, 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120.

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input checked="" type="checkbox"/> Other: <u>Sequence Comparison A,B,C</u> |

DETAILED ACTION

Formal Matters

Claims 2-4 were amended in Paper No. 17, 7/24/2003. Claims 2-4, 10-12, 25 are pending and under consideration.

Response to Amendment

The objection to the Specification and Claims has been obviated by Applicant's amendment and is thus withdrawn.

The rejection of claims 2-3, 10-12, 23-25 under 35 USC 112 first paragraph has been obviated by Applicant's amendment and is thus withdrawn.

The rejection of claims 2-3, 10-12, 23-25 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention has been obviated by Applicant's amendment and is thus withdrawn.

The rejection of claim 4 and 23 under 35 U.S.C. 102(b) as being anticipated by Wei et al. (1998) has been obviated by Applicant's amendment and is thus withdrawn.

New issues are set forth below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2-4, 10-12, 25 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S.

Patent No. 6,441,156 (Lerman et al.). The '156 patent has a priority date of 12/30/1998.

The '156 patent discloses the cloning and expression of calcium channel subunits. The '156 patent discloses, and claims, nucleic acids which encode amino acid sequences which are 100% identical to the encoded amino acid sequence of SEQ ID NO: 20, thus the nucleic acid encoding SEQ ID NO: 20 as claimed in claim 2-3 is anticipated (see Sequence Comparison A, attached). Furthermore, the '156 patent discloses, and claims, a nucleic acid sequence 100% identical to SEQ ID NO: 1, thus claim 4 is anticipated (see Sequence Comparison B, attached). Additionally, the '156 patent discloses and claims a nucleic acid sequence 100% identical to SEQ ID NO: 3, thus anticipating claim 4 (see Sequence Comparison C, attached). The '156 patent further discloses vectors comprising the nucleic acid, host cells and methods of producing the encoded protein (column 3, lines 25-41), thus claims 10-12 are anticipated. The '156 patent further discloses nucleic acids encoding a nucleotide sequence encoding a tag (column 2, lines 30-40), thus claim 25 is anticipated.

Art Unit: 1646

Conclusion

No claim is allowed.

Advisory Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph F. Murphy whose telephone number is 703-305-7245.

The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on 703-308-6564. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-308-0294 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.



Joseph F. Murphy, Ph. D.
Patent Examiner
Art Unit 1646
October 21, 2003

RESULT 1

US-09-470-443-2

; Sequence 2, Application US/09470443

; Patent No. 6441156

; GENERAL INFORMATION:

; APPLICANT: Lerman, Michael I.

; APPLICANT: Minna, John D.

; APPLICANT: Latif, Farida

; APPLICANT: Wei, Ming-Hui

; APPLICANT: Sekido, Yoshitaka

; APPLICANT: Gao, Boning

; APPLICANT: Duh, Fuh-Mei

: TITLE OF INVENTION: Calcium Channel Compositions and Methods of Use Thereof

: FILE REFERENCE: NIH-05043

: CURRENT APPLICATION NUMBER: US/09/470.443

CURRENT FILING DATE: 1999-12-22

: EARLIER APPLICATION NUMBER: 60/114.359

EARLIER FILING DATE: 1998-12-30

NUMBER OF SEO ID NOS: 114

SOFTWARE: PatentIn Ver. 2.0

• SEO ID NO. 2

: LENGTH: 1145

TYPE. PRT

ORGANISM: Homo sapiens

US-09-470-443-2

Query Match 100.0%; Score 6089; DB 4; Length 1145;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1145; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy	1	MAVPARTCGASRPGPARTARPWPGCGPHPGPTRRPTSGPPRPLWLLLPLLLPLLAAPGAS	60
Db	1	MAVPARTCGASRPGPARTARPWPGCGPHPGPTRRPTSGPPRPLWLLLPLLLPLLAAPGAS	60
Qy	61	AYSFPQQHTMQHWARRLEQEVDGVMRIFGGVQQLREIYKDNRNLFVEQENEPQKLVEKVA	120
Db	61	AYSFPQQHTMQHWARRLEQEVDGVMRIFGGVQQLREIYKDNRNLFVEQENEPQKLVEKVA	120
Qy	121	GDIESLLDRKVQALKRLADAAENFQKAHRWQDNIKEEDIVVYDAKADAELDDPESEDVER	180
Db	121	GDIESLLDRKVQALKRLADAAENFQKAHRWQDNIKEEDIVVYDAKADAELDDPESEDVER	180
Qy	181	GSKASTLRLDIEDPNFKNKVNYSYAAVQIPTDIYKGSTVILNELNWTEALENVFMENRR	240
Db	181	GSKASTLRLDIEDPNFKNKVNYSYAAVQIPTDIYKGSTVILNELNWTEALENVFMENRR	240
Qy	241	QDPTLLWQVFGSATGVTRYYPATPWRAPKKIDLYDVRRRPWYIQGASSPKDMVIIVDVSG	300
Db	241	QDPTLLWQVFGSATGVTRYYPATPWRAPKKIDLYDVRRRPWYIQGASSPKDMVIIVDVSG	300
Qy	301	SVSGLTLKLMKTSVCEMLDTLSDDDYVNVASFNEKAQPVSCFTHLVQANVRNKKVFKEAV	360
Db	301	SVSGLTLKLMKTSVCEMLDTLSDDDYVNVASFNEKAQPVSCFTHLVQANVRNKKVFKEAV	360
Qy	361	QGMVAKGTTGYKAGFEYAFDQLQNSNITRANCNKMIMMFTDGGEDRVQDVFEKYNWPNRT	420
Db	361	QGMVAKGTTGYKAGFEYAFDQLQNSNITRANCNKMIMMFTDGGEDRVQDVFEKYNWPNRT	420
Qy	421	VRVFTFSVGQHNYDVTPLQWMACANKGYFFEIPSIGAIRINTQEYLDVLGRPMVLAGEA	480
Db	421	VRVFTFSVGQHNYDVTPLQWMACANKGYFFEIPSIGAIRINTQEYLDVLGRPMVLAGEA	480
Qy	481	KQVQWTVNYEDALGLGLVVTGTLPVFNLTQDGPGEKKNQLILGVMGIDVALNDIKRLTPN	540
Db	481	KQVQWTVNYEDALGLGLVVTGTLPVFNLTQDGPGEKKNQLILGVMGIDVALNDIKRLTPN	540
Qy	541	YTLGANGYVFAIDLNGYVLLHPNLKPQTTNFREPVTLDFLDAELEDENKEEIRRSMIDGN	600
Db	541	YTLGANGYVFAIDLNGYVLLHPNLKPQTTNFREPVTLDFLDAELEDENKEEIRRSMIDGN	600

QY	601	KGHKQIRTLVKS LDERYIDEVTRNYTWVPIRSTNYS LGLVLPYSTFY LQANLSDQILQV	660
Db	601	KGHKQIRTLVKS LDERYIDEVTRNYTWVPIRSTNYS LGLVLPYSTFY LQANLSDQILQV	660
QY	661	KYFEFLLPSSFESEGHVFIAPREYCKDLNASDNNTFLKNFIELMEKVTPDSKQCNNFLL	720
Db	661	KYFEFLLPSSFESEGHVFIAPREYCKDLNASDNNTFLKNFIELMEKVTPDSKQCNNFLL	720
QY	721	HNLILDTGITQQ LVERVWRDQDLNTYSLLAVFAATDGGITRVFPNKA AEDWTENPEPFNA	780
Db	721	HNLILDTGITQQ LVERVWRDQDLNTYSLLAVFAATDGGITRVFPNKA AEDWTENPEPFNA	780
QY	781	SFYRRSLDNHGYVFKPPHQDALLRPLELENDTVGILVSTAVELS LGRRTL RP AVVGVKLD	840
Db	781	SFYRRSLDNHGYVFKPPHQDALLRPLELENDTVGILVSTAVELS LGRRTL RP AVVGVKLD	840
QY	841	LEAWAEKFKVLASNRTHQDQPQKCGPNSHCEMDC EVNNEDLLCVLIDDDGGFLVLSNQNHQ	900
Db	841	LEAWAEKFKVLASNRTHQDQPQKCGPNSHCEMDC EVNNEDLLCVLIDDDGGFLVLSNQNHQ	900
QY	901	WDQVGRFFSEVDANLMLALYNNSFYTRKESYDYQAACAPQPPGNLGAAPRGVFVPTVADF	960
Db	901	WDQVGRFFSEVDANLMLALYNNSFYTRKESYDYQAACAPQPPGNLGAAPRGVFVPTVADF	960
QY	961	LNLAWWTSAAAWSLFQQLLYGLIYHSWFQADPAEAE GSPETRESSVMKQTQYYFGSVNA	1020
Db	961	LNLAWWTSAAAWSLFQQLLYGLIYHSWFQADPAEAE GSPETRESSVMKQTQYYFGSVNA	1020
QY	1021	SYNAIIDCGNCSRLFHAQRLTNTNLLFVVAEKPLCSQCEAGRLLQKETHCPADGPEQCEL	1080
Db	1021	SYNAIIDCGNCSRLFHAQRLTNTNLLFVVAEKPLCSQCEAGRLLQKETHCPADGPEQCEL	1080
QY	1081	VQRPRYRRGPHICFDYNATEDTSDCGRGASFPPSLGVLVSLQLLLLLGLPPRPQPQVLVH	1140
Db	1081	VQRPRYRRGPHICFDYNATEDTSDCGRGASFPPSLGVLVSLQLLLLLGLPPRPQPQVLVH	1140
QY	1141	ASRRL 1145	
Db	1141	ASRRL 1145	

Sequence Comparison B

RESULT 1

US-09-470-443-1

; Sequence 1, Application US/09470443

; Patent No. 6441156

; GENERAL INFORMATION:

; APPLICANT: Lerman, Michael I.

; APPLICANT: Minna, John D.

; APPLICANT: Latif, Farida

; APPLICANT: Wei, Ming-Hui

; APPLICANT: Sekido, Yoshitaka

; APPLICANT: Gao, Boning

; APPLICANT: Duh, Fuh-Mei

; TITLE OF INVENTION: Calcium Channel Compositions and Methods of Use Thereof

; FILE REFERENCE: NIH-05043

; CURRENT APPLICATION NUMBER: US/09/470,443

; CURRENT FILING DATE: 1999-12-22

; EARLIER APPLICATION NUMBER: 60/114,359

; EARLIER FILING DATE: 1998-12-30

; NUMBER OF SEQ ID NOS: 114

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 1

; LENGTH: 5463

; TYPE: DNA

; ORGANISM: Homo sapiens

; FEATURE:

; NAME/KEY: CDS

; LOCATION: (162)..(3599)

US-09-470-443-1

Query Match 100.0%; Score 3186; DB 4; Length 5463;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 3186; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy      1 ATGGCGGTGCCGGCTCGGACCTGCGGCGCCTCTCGGCCCGGCCAGCGCGGACTGCGCGC 60
          |||
Db     162 ATGGCGGTGCCGGCTCGGACCTGCGGCGCCTCTCGGCCCGGCCAGCGCGGACTGCGCGC 221

Qy      61 CCCTGGCCCGGCTGCGGCCCCACCTGGCCCCGGCACCCGGCGCCCGACGTCCGGGCCC 120
          |||
Db     222 CCCTGGCCCGGCTGCGGCCCCACCTGGCCCCGGCACCCGGCGCCCGACGTCCGGGCCC 281

Qy     121 CCGCGCCCGCTGTGGCTGCTGCTGCCGCTTCTACCGCTGCTCGCCGCCCGGGCGCCTCT 180
          |||
Db     282 CCGCGCCCGCTGTGGCTGCTGCTGCCGCTTCTACCGCTGCTCGCCGCCCGGGCGCCTCT 341

Qy     181 GCCTACAGCTTCCCCAGCAGCACACGATGCAGCACTGGGCCCGGCGTCTGGAGCAGGAG 240
          |||
Db     342 GCCTACAGCTTCCCCAGCAGCACACGATGCAGCACTGGGCCCGGCGTCTGGAGCAGGAG 401

Qy     241 GTCGACGGCGTGATGCGGATTTTGGAGGCGTCCAGCAGCTCCGTGAGATTTACAAGGAC 300
          |||
Db     402 GTCGACGGCGTGATGCGGATTTTGGAGGCGTCCAGCAGCTCCGTGAGATTTACAAGGAC 461

Qy     301 AACCGGAACCTGTTTCGAGGTACAGGAGAATGAGCCTCAGAAGTTGGTGGAGAAGGTGGCA 360
          |||
Db     462 AACCGGAACCTGTTTCGAGGTACAGGAGAATGAGCCTCAGAAGTTGGTGGAGAAGGTGGCA 521

Qy     361 GGGGACATTGAGAGCCTTCTGGACAGGAAGGTGCAGGCCCTGAAGAGACTGGCTGATGCT 420
          |||
Db     522 GGGGACATTGAGAGCCTTCTGGACAGGAAGGTGCAGGCCCTGAAGAGACTGGCTGATGCT 581

Qy     421 GCAGAGAACTTCCAGAAAGCACACCGCTGGCAGGACAACATCAAGGAGGAAGACATCGTG 480
          |||
Db     582 GCAGAGAACTTCCAGAAAGCACACCGCTGGCAGGACAACATCAAGGAGGAAGACATCGTG 641

Qy     481 TACTATGACGCCAAGGCTGACGCTGAGCTGGACGACCCTGAGAGTGAGGATGTGGAAAGG 540
          |||
Db     642 TACTATGACGCCAAGGCTGACGCTGAGCTGGACGACCCTGAGAGTGAGGATGTGGAAAGG 701

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Qy	541	GGGTCTAAGGCCAGCACCTAAGGCTGGACTTCATCGAGGACCCAACTTCAAGAACAAG	600
Db	702	GGGTCTAAGGCCAGCACCTAAGGCTGGACTTCATCGAGGACCCAACTTCAAGAACAAG	761
Qy	601	GTCAACTATTTCATACGCGGCTGTACAGATCCCTACGGACATCTACAAAGGCTCCACTGTC	660
Db	762	GTCAACTATTTCATACGCGGCTGTACAGATCCCTACGGACATCTACAAAGGCTCCACTGTC	821
Qy	661	ATCCTCAATGAGCTCAACTGGACAGAGGCCCTGGAGAATGTGTTTCATGGAAAACCGCAGA	720
Db	822	ATCCTCAATGAGCTCAACTGGACAGAGGCCCTGGAGAATGTGTTTCATGGAAAACCGCAGA	881
Qy	721	CAAGACCCACACTGCTGTGGCAGGTCTTCGGCAGCGCCACAGGAGTCACTCGCTACTAC	780
Db	882	CAAGACCCACACTGCTGTGGCAGGTCTTCGGCAGCGCCACAGGAGTCACTCGCTACTAC	941
Qy	781	CCGGCCACCCCGTGGCGAGCCCCAAGAAGATCGACCTGTACGATGTCCGAAGGAGACCC	840
Db	942	CCGGCCACCCCGTGGCGAGCCCCAAGAAGATCGACCTGTACGATGTCCGAAGGAGACCC	1001
Qy	841	TGGTATATCCAGGGGGCCTCGTCACCCAAAGACATGGTCATCATCGTGGATGTGAGTGGC	900
Db	1002	TGGTATATCCAGGGGGCCTCGTCACCCAAAGACATGGTCATCATCGTGGATGTGAGTGGC	1061
Qy	901	AGTGTGAGCGGCCTGACCCTGAAGCTGATGAAGACATCTGTCTGCGAGATGCTGGACACG	960
Db	1062	AGTGTGAGCGGCCTGACCCTGAAGCTGATGAAGACATCTGTCTGCGAGATGCTGGACACG	1121
Qy	961	CTGTCTGATGATGACTATGTGAATGTGGCCTCGTTCAACGAGAAGGCACAGCCTGTGTCA	1020
Db	1122	CTGTCTGATGATGACTATGTGAATGTGGCCTCGTTCAACGAGAAGGCACAGCCTGTGTCA	1181
Qy	1021	TGCTTCACACACCTGGTGCAGGCCAATGTGCGCAACAAGAAGGTGTTCAAGGAAGCTGTG	1080
Db	1182	TGCTTCACACACCTGGTGCAGGCCAATGTGCGCAACAAGAAGGTGTTCAAGGAAGCTGTG	1241
Qy	1081	CAGGGCATGGTGGCCAAGGGCACCACAGGCTACAAGGCCGGCTTTGAGTATGCCTTTGAC	1140
Db	1242	CAGGGCATGGTGGCCAAGGGCACCACAGGCTACAAGGCCGGCTTTGAGTATGCCTTTGAC	1301
Qy	1141	CAGCTGCAGAACTCCAACATCACTCGGGCCAAGTGAACAAGATGATCATGATGTTTCACG	1200
Db	1302	CAGCTGCAGAACTCCAACATCACTCGGGCCAAGTGAACAAGATGATCATGATGTTTCACG	1361
Qy	1201	GATGGTGGTGAGGACCGCGTGCAGGACGTCTTTGAGAAGTACAATTGGCCAAACCGGACG	1260
Db	1362	GATGGTGGTGAGGACCGCGTGCAGGACGTCTTTGAGAAGTACAATTGGCCAAACCGGACG	1421
Qy	1261	GTGCGCGTGTTTACTTTCTCCGTGGGGCAGCATAACTATGACGTACACCGCTGCAGTGG	1320
Db	1422	GTGCGCGTGTTTACTTTCTCCGTGGGGCAGCATAACTATGACGTACACCGCTGCAGTGG	1481
Qy	1321	ATGGCCTGTGCCAACAAGGCTACTATTTTGAGATCCCTTCCATCGGAGCCATCCGCATC	1380
Db	1482	ATGGCCTGTGCCAACAAGGCTACTATTTTGAGATCCCTTCCATCGGAGCCATCCGCATC	1541
Qy	1381	AACACACAGGAATATCTAGATGTGTGGGCAGGCCCATGGTGCTGGCAGGCAAGGAGGCC	1440
Db	1542	AACACACAGGAATATCTAGATGTGTGGGCAGGCCCATGGTGCTGGCAGGCAAGGAGGCC	1601
Qy	1441	AAGCAGGTTTCAGTGGACCAACGTGTATGAGGATGCACTGGGACTGGGGTTGGTGGTAACA	1500
Db	1602	AAGCAGGTTTCAGTGGACCAACGTGTATGAGGATGCACTGGGACTGGGGTTGGTGGTAACA	1661
Qy	1501	GGGACCCCTCCCTGTTTTCAACCTGACACAGGATGGCCCTGGGGAAAAGAAGAACCGCTG	1560
Db	1662	GGGACCCCTCCCTGTTTTCAACCTGACACAGGATGGCCCTGGGGAAAAGAAGAACCGCTG	1721
Qy	1561	ATCCTGGGCGTGATGGGCATTGACGTGGCTCTGAATGACATCAAGAGGCTGACCCCCAAC	1620

Db	1722	ATCCTGGGCGTGATGGGCATTGACGTGGCTCTGAATGACATCAAGAGGCTGACCCCCAAC	1781
Qy	1621	TACACGCTTGGAGCCAACGGCTATGTGTTTGCCATTGACCTGAACGGCTACGTGTTGCTG	1680
Db	1782	TACACGCTTGGAGCCAACGGCTATGTGTTTGCCATTGACCTGAACGGCTACGTGTTGCTG	1841
Qy	1681	CACCCCAATCTCAAGCCCCAGACCACCAACTTCCGGGAGCCTGTGACTCTGGACTTCCTG	1740
Db	1842	CACCCCAATCTCAAGCCCCAGACCACCAACTTCCGGGAGCCTGTGACTCTGGACTTCCTG	1901
Qy	1741	GATGCGGAGCTAGAGGATGAGAACAAGGAAGAGATCCGTCGGAGCATGATTGATGGCAAC	1800
Db	1902	GATGCGGAGCTAGAGGATGAGAACAAGGAAGAGATCCGTCGGAGCATGATTGATGGCAAC	1961
Qy	1801	AAGGGCCACAAGCAGATCAGAACGTTGGTCAAGTCCCTGGATGAGAGGTACATAGATGAG	1860
Db	1962	AAGGGCCACAAGCAGATCAGAACGTTGGTCAAGTCCCTGGATGAGAGGTACATAGATGAG	2021
Qy	1861	GTGACACGGAATAACCTGGGTGCCTATAAGGAGCACTAACTACAGCCTGGGGCTGGTG	1920
Db	2022	GTGACACGGAATAACCTGGGTGCCTATAAGGAGCACTAACTACAGCCTGGGGCTGGTG	2081
Qy	1921	CTCCCACCTACAGCACCTTCTACCTCCAAGCCAATCTCAGTGACCAGATCCTGCAGGTC	1980
Db	2082	CTCCCACCTACAGCACCTTCTACCTCCAAGCCAATCTCAGTGACCAGATCCTGCAGGTC	2141
Qy	1981	AAGTATTTTGAGTTCCTGCTCCCCAGCAGCTTTGAGTCTGAAGGACACGTTTTCATTGCT	2040
Db	2142	AAGTATTTTGAGTTCCTGCTCCCCAGCAGCTTTGAGTCTGAAGGACACGTTTTCATTGCT	2201
Qy	2041	CCCAGAGAGTACTGCAAGGACCTGAATGCCTCAGACAACAACACCGAGTTCCTGAAAAAC	2100
Db	2202	CCCAGAGAGTACTGCAAGGACCTGAATGCCTCAGACAACAACACCGAGTTCCTGAAAAAC	2261
Qy	2101	TTTATTGAGCTCATGGAGAAAGTGACTCCAGACTCCAAGCAGTGCAACAACCTTCCTTCTG	2160
Db	2262	TTTATTGAGCTCATGGAGAAAGTGACTCCAGACTCCAAGCAGTGCAACAACCTTCCTTCTG	2321
Qy	2161	CACAACCTGATCTTGGACACGGGCATCACGCAGCAGCTGGTAGAGCGTGTGTGGAGGGAC	2220
Db	2322	CACAACCTGATCTTGGACACGGGCATCACGCAGCAGCTGGTAGAGCGTGTGTGGAGGGAC	2381
Qy	2221	CAGGATCTCAACACGTACAGCCTACTGGCCGTGTTTCGCTGCCACAGACGGTGGCATCACC	2280
Db	2382	CAGGATCTCAACACGTACAGCCTACTGGCCGTGTTTCGCTGCCACAGACGGTGGCATCACC	2441
Qy	2281	CGAGTCTTCCCCAACAAGGCAGCTGAGGACTGGACAGAGAACCCTGAGCCCTTCAATGCC	2340
Db	2442	CGAGTCTTCCCCAACAAGGCAGCTGAGGACTGGACAGAGAACCCTGAGCCCTTCAATGCC	2501
Qy	2341	AGCTTCTACCGCCGCAGCCTGGATAACCACGGTTATGTCTTCAAGCCCCACACCAGGAT	2400
Db	2502	AGCTTCTACCGCCGCAGCCTGGATAACCACGGTTATGTCTTCAAGCCCCACACCAGGAT	2561
Qy	2401	GCCCTGTTAAGGCCGCTGGAGCTGGAGAATGACACTGTGGGCATCCTCGTCAGCACAGCT	2460
Db	2562	GCCCTGTTAAGGCCGCTGGAGCTGGAGAATGACACTGTGGGCATCCTCGTCAGCACAGCT	2621
Qy	2461	GTGGAGCTCAGCCTAGGCAGGCGCACACTGAGGCCAGCAGTGGTGGGCGTCAAGCTGGAC	2520
Db	2622	GTGGAGCTCAGCCTAGGCAGGCGCACACTGAGGCCAGCAGTGGTGGGCGTCAAGCTGGAC	2681
Qy	2521	CTAGAGGCTTGGGCTGAGAAGTTCAAGGTGCTAGCCAGCAACCGTACCCACCAAGACCAG	2580
Db	2682	CTAGAGGCTTGGGCTGAGAAGTTCAAGGTGCTAGCCAGCAACCGTACCCACCAAGACCAG	2741
Qy	2581	CCTCAGAAGTGCGGCCCCAACAGCCACTGTGAGATGGACTGCGAGGTTAACAATGAGGAC	2640
Db	2742	CCTCAGAAGTGCGGCCCCAACAGCCACTGTGAGATGGACTGCGAGGTTAACAATGAGGAC	2801
Qy	2641	TTACTCTGTGCCTCATTGATGATGGAGGATTCTGGTGCTGTCAAACCAGAACCATCAG	2700

Db	2802		TTACTCTGTGTCCTCATTGATGATGGAGGATTCTGGTGCTGTCAAACCAGAACCATCAG	2861
Qy	2701		TGGGACCAGGTGGGCAGGTTCTTCAGTGAGGTGGATGCCAACCTGATGCTGGCACTCTAC	2760
Db	2862		TGGGACCAGGTGGGCAGGTTCTTCAGTGAGGTGGATGCCAACCTGATGCTGGCACTCTAC	2921
Qy	2761		AATAACTCCTTCTACACCCGCAAGGAGTCCTATGACTATCAGGCAGCCTGTGCCCCCTCAG	2820
Db	2922		AATAACTCCTTCTACACCCGCAAGGAGTCCTATGACTATCAGGCAGCCTGTGCCCCCTCAG	2981
Qy	2821		CCCCCTGGCAACCTGGGTGCTGCACCCCGGGGTGTCTTTGTGCCCACCGTTGCAGATTTC	2880
Db	2982		CCCCCTGGCAACCTGGGTGCTGCACCCCGGGGTGTCTTTGTGCCCACCGTTGCAGATTTC	3041
Qy	2881		CTTAACCTGGCCTGGTGGACCTCTGCTGCCGCCTGGTCCCTGTTCCAGCAGCTTCTCTAC	2940
Db	3042		CTTAACCTGGCCTGGTGGACCTCTGCTGCCGCCTGGTCCCTGTTCCAGCAGCTTCTCTAC	3101
Qy	2941		GGCCTCATCTACCACAGCTGGTTCCAAGCAGACCCCGCGAGGCCGAGGGGAGCCCCGAG	3000
Db	3102		GGCCTCATCTACCACAGCTGGTTCCAAGCAGACCCCGCGAGGCCGAGGGGAGCCCCGAG	3161
Qy	3001		ACGCGCGAGAGCAGCTGCGTCATGAAACAGACCCAGTACTACTTCGGCTCGGTAAACGCC	3060
Db	3162		ACGCGCGAGAGCAGCTGCGTCATGAAACAGACCCAGTACTACTTCGGCTCGGTAAACGCC	3221
Qy	3061		TCCTACAACGCCATCATCGACTGCGGAAACTGCTCCAGGCTGTTCCACGCGCAGAGACTG	3120
Db	3222		TCCTACAACGCCATCATCGACTGCGGAAACTGCTCCAGGCTGTTCCACGCGCAGAGACTG	3281
Qy	3121		ACCAACACCAATCTTCTCTTTGTGGTGGCCGAGAAGCCGCTGTGCAGCCAGTGCGAGGCT	3180
Db	3282		ACCAACACCAATCTTCTCTTTGTGGTGGCCGAGAAGCCGCTGTGCAGCCAGTGCGAGGCT	3341
Qy	3181		GGCCGG 3186	
Db	3342		GGCCGG 3347	

Sequence Comparison C

RESULT 1

US-09-470-443-1

; Sequence 1, Application US/09470443

; Patent No. 6441156

; GENERAL INFORMATION:

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; TITLE OF INVENTION: Calcium Channel Compositions and Methods of Use Thereof

; FILE REFERENCE: NIH-05043

; CURRENT APPLICATION NUMBER: US/09/470,443

; CURRENT FILING DATE: 1999-12-22

; EARLIER APPLICATION NUMBER: 60/114,359

; EARLIER FILING DATE: 1998-12-30

; NUMBER OF SEQ ID NOS: 114

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 1

; LENGTH: 5463

; TYPE: DNA

; ORGANISM: Homo sapiens

; FEATURE:

; NAME/KEY: CDS

; LOCATION: (162)..(3599)

US-09-470-443-1

Query Match 100.0%; Score 3327; DB 4; Length 5463;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 3327; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy	1	ATGGCGGTGCCGGCTCGGACCTGCGGCGCCTCTCGGCCCGGCCAGCGCGGACTGCGCGC	60
Db	162	ATGGCGGTGCCGGCTCGGACCTGCGGCGCCTCTCGGCCCGGCCAGCGCGGACTGCGCGC	221
Qy	61	CCCTGGCCCGGCTGCGGCCCCACCCCTGGCCCCGGCACCCGGCGCCCGACGTCCGGGCCC	120
Db	222	CCCTGGCCCGGCTGCGGCCCCACCCCTGGCCCCGGCACCCGGCGCCCGACGTCCGGGCCC	281
Qy	121	CCGCGCCCGCTGTGGCTGCTGCTGCCGCTTCTACCGCTGCTCGCCGCCCCGGCGCCTCT	180
Db	282	CCGCGCCCGCTGTGGCTGCTGCTGCCGCTTCTACCGCTGCTCGCCGCCCCGGCGCCTCT	341
Qy	181	GCCTACAGCTTCCCCAGCAGCACACGATGCAGCACTGGGCCCGGCGTCTGGAGCAGGAG	240
Db	342	GCCTACAGCTTCCCCAGCAGCACACGATGCAGCACTGGGCCCGGCGTCTGGAGCAGGAG	401
Qy	241	GTCGACGGCGTGATGCGGATTTTGGAGGCGTCCAGCAGCTCCGTGAGATTTACAAGGAC	300
Db	402	GTCGACGGCGTGATGCGGATTTTGGAGGCGTCCAGCAGCTCCGTGAGATTTACAAGGAC	461
Qy	301	AACCGGAACCTGTTTCGAGGTACAGGAGAATGAGCCTCAGAAGTTGGTGGAGAAGGTGGCA	360
Db	462	AACCGGAACCTGTTTCGAGGTACAGGAGAATGAGCCTCAGAAGTTGGTGGAGAAGGTGGCA	521
Qy	361	GGGGACATTGAGAGCCTTCTGGACAGGAAGGTGCAGGCCCTGAAGAGACTGGCTGATGCT	420
Db	522	GGGGACATTGAGAGCCTTCTGGACAGGAAGGTGCAGGCCCTGAAGAGACTGGCTGATGCT	581
Qy	421	GCAGAGAACTTCCAGAAAGCACACCGCTGGCAGGACAACATCAAGGAGGAAGACATCGTG	480
Db	582	GCAGAGAACTTCCAGAAAGCACACCGCTGGCAGGACAACATCAAGGAGGAAGACATCGTG	641
Qy	481	TACTATGACGCCAAGGCTGACGCTGAGCTGGACGACCCTGAGAGTGAGGATGTGGAAAGG	540
Db	642	TACTATGACGCCAAGGCTGACGCTGAGCTGGACGACCCTGAGAGTGAGGATGTGGAAAGG	701

Qy	541	GGGTCTAAGGCCAGCACCCCTAAGGCTGGACTTCATCGAGGACCCAACTTCAAGAACAAG	600
Db	702	GGGTCTAAGGCCAGCACCCCTAAGGCTGGACTTCATCGAGGACCCAACTTCAAGAACAAG	761
Qy	601	GTCAACTATTTCATACGCGGCTGTACAGATCCCTACGGACATCTACAAAGGCTCCACTGTC	660
Db	762	GTCAACTATTTCATACGCGGCTGTACAGATCCCTACGGACATCTACAAAGGCTCCACTGTC	821
Qy	661	ATCCTCAATGAGCTCAACTGGACAGAGGCCCTGGAGAATGTGTTTCATGGAAAACCGCAGA	720
Db	822	ATCCTCAATGAGCTCAACTGGACAGAGGCCCTGGAGAATGTGTTTCATGGAAAACCGCAGA	881
Qy	721	CAAGACCCACACTGCTGTGGCAGGTCTTCGGCAGCGCCACAGGAGTCACTCGCTACTAC	780
Db	882	CAAGACCCACACTGCTGTGGCAGGTCTTCGGCAGCGCCACAGGAGTCACTCGCTACTAC	941
Qy	781	CCGGCCACCCCGTGGCGAGCCCCAAGAAGATCGACCTGTACGATGTCCGAAGGAGACCC	840
Db	942	CCGGCCACCCCGTGGCGAGCCCCAAGAAGATCGACCTGTACGATGTCCGAAGGAGACCC	1001
Qy	841	TGGTATATCCAGGGGGCCTCGTCACCCAAAGACATGGTCATCATCGTGGATGTGAGTGGC	900
Db	1002	TGGTATATCCAGGGGGCCTCGTCACCCAAAGACATGGTCATCATCGTGGATGTGAGTGGC	1061
Qy	901	AGTGTGAGCGGCCTGACCCTGAAGCTGATGAAGACATCTGTCTGCGAGATGCTGGACACG	960
Db	1062	AGTGTGAGCGGCCTGACCCTGAAGCTGATGAAGACATCTGTCTGCGAGATGCTGGACACG	1121
Qy	961	CTGTCTGATGATGACTATGTGAATGTGGCCTCGTTCAACGAGAAGGCACAGCCTGTGTCA	1020
Db	1122	CTGTCTGATGATGACTATGTGAATGTGGCCTCGTTCAACGAGAAGGCACAGCCTGTGTCA	1181
Qy	1021	TGCTTCACACACCTGGTGCAGGCCAATGTGCGCAACAAGAAGGTGTTCAAGGAAGCTGTG	1080
Db	1182	TGCTTCACACACCTGGTGCAGGCCAATGTGCGCAACAAGAAGGTGTTCAAGGAAGCTGTG	1241
Qy	1081	CAGGGCATGGTGGCCAAGGGCACCACAGGCTACAAGGCCGGCTTTGAGTATGCCTTTGAC	1140
Db	1242	CAGGGCATGGTGGCCAAGGGCACCACAGGCTACAAGGCCGGCTTTGAGTATGCCTTTGAC	1301
Qy	1141	CAGCTGCAGAACTCCAACATCACTCGGGCCAACTGCAACAAGATGATCATGATGTTTCACG	1200
Db	1302	CAGCTGCAGAACTCCAACATCACTCGGGCCAACTGCAACAAGATGATCATGATGTTTCACG	1361
Qy	1201	GATGGTGGTGAGGACCGCGTGCAGGACGTCTTTGAGAAGTACAATTGGCCAAACCGGACG	1260
Db	1362	GATGGTGGTGAGGACCGCGTGCAGGACGTCTTTGAGAAGTACAATTGGCCAAACCGGACG	1421
Qy	1261	GTGCGCGTGTTTACTTTCTCCGTGGGGCAGCATAACTATGACGTACACCGCTGCAGTGG	1320
Db	1422	GTGCGCGTGTTTACTTTCTCCGTGGGGCAGCATAACTATGACGTACACCGCTGCAGTGG	1481
Qy	1321	ATGGCCTGTGCCAACAAAGGCTACTATTTTGAGATCCCTTCCATCGGAGCCATCCGCATC	1380
Db	1482	ATGGCCTGTGCCAACAAAGGCTACTATTTTGAGATCCCTTCCATCGGAGCCATCCGCATC	1541
Qy	1381	AACACACAGGAATATCTAGATGTGTTGGGCAGGCCCATGGTGCTGGCAGGCAAGGAGGCC	1440
Db	1542	AACACACAGGAATATCTAGATGTGTTGGGCAGGCCCATGGTGCTGGCAGGCAAGGAGGCC	1601
Qy	1441	AAGCAGGTTTCAGTGGACCAACGTGTATGAGGATGCACTGGGACTGGGGTTGGTGGTAACA	1500
Db	1602	AAGCAGGTTTCAGTGGACCAACGTGTATGAGGATGCACTGGGACTGGGGTTGGTGGTAACA	1661
Qy	1501	GGGACCCTCCCTGTTTTCAACCTGACACAGGATGGCCCTGGGGAAAAGAAGAACAGCTG	1560
Db	1662	GGGACCCTCCCTGTTTTCAACCTGACACAGGATGGCCCTGGGGAAAAGAAGAACAGCTG	1721
Qy	1561	ATCCTGGGCGTGATGGGCATTGACGTGGCTCTGAATGACATCAAGAGGCTGACCCCCAAC	1620
Db	1722	ATCCTGGGCGTGATGGGCATTGACGTGGCTCTGAATGACATCAAGAGGCTGACCCCCAAC	1781

Qy	1621	TACACGCTTGGAGCCAACGGCTATGTGTTTGCCATTGACCTGAACGGCTACGTGTTGCTG	1680
Db	1782	TACACGCTTGGAGCCAACGGCTATGTGTTTGCCATTGACCTGAACGGCTACGTGTTGCTG	1841
Qy	1681	CACCCCAATCTCAAGCCCCAGACCACCAACTTCCGGGAGCCTGTGACTCTGGACTTCCTG	1740
Db	1842	CACCCCAATCTCAAGCCCCAGACCACCAACTTCCGGGAGCCTGTGACTCTGGACTTCCTG	1901
Qy	1741	GATGCGGAGCTAGAGGATGAGAACAAGGAAGAGATCCGTCGGAGCATGATTGATGGCAAC	1800
Db	1902	GATGCGGAGCTAGAGGATGAGAACAAGGAAGAGATCCGTCGGAGCATGATTGATGGCAAC	1961
Qy	1801	AAGGGCCACAAGCAGATCAGAACGTTGGTCAAGTCCCTGGATGAGAGGTACATAGATGAG	1860
Db	1962	AAGGGCCACAAGCAGATCAGAACGTTGGTCAAGTCCCTGGATGAGAGGTACATAGATGAG	2021
Qy	1861	GTGACACGGAATAACCTGGGTGCCTATAAGGAGCACTAACTACAGCCTGGGGCTGGTG	1920
Db	2022	GTGACACGGAATAACCTGGGTGCCTATAAGGAGCACTAACTACAGCCTGGGGCTGGTG	2081
Qy	1921	CTCCACCTACAGCACCTTCTACCTCCAAGCCAATCTCAGTGACCAGATCCTGCAGGTC	1980
Db	2082	CTCCACCTACAGCACCTTCTACCTCCAAGCCAATCTCAGTGACCAGATCCTGCAGGTC	2141
Qy	1981	AAGTATTTGAGTTCCTGCTCCCCAGCAGCTTTGAGTCTGAAGGACACGTTTTTCATTGCT	2040
Db	2142	AAGTATTTGAGTTCCTGCTCCCCAGCAGCTTTGAGTCTGAAGGACACGTTTTTCATTGCT	2201
Qy	2041	CCCAGAGAGTACTGCAAGGACCTGAATGCCTCAGACAACAACACCGAGTTCCTGAAAAAC	2100
Db	2202	CCCAGAGAGTACTGCAAGGACCTGAATGCCTCAGACAACAACACCGAGTTCCTGAAAAAC	2261
Qy	2101	TTTATTGAGCTCATGGAGAAAGTGACTCCAGACTCCAAGCAGTGCAACAACCTTCCTTCTG	2160
Db	2262	TTTATTGAGCTCATGGAGAAAGTGACTCCAGACTCCAAGCAGTGCAACAACCTTCCTTCTG	2321
Qy	2161	CACAACCTGATCTTGGACACGGGCATCACGCAGCAGCTGGTAGAGCGTGTGTGGAGGGAC	2220
Db	2322	CACAACCTGATCTTGGACACGGGCATCACGCAGCAGCTGGTAGAGCGTGTGTGGAGGGAC	2381
Qy	2221	CAGGATCTCAACACGTACAGCCTACTGGCCGTGTTTCGCTGCCACAGACGGTGGCATCACC	2280
Db	2382	CAGGATCTCAACACGTACAGCCTACTGGCCGTGTTTCGCTGCCACAGACGGTGGCATCACC	2441
Qy	2281	CGAGTCTTCCCCAACAAGGCAGCTGAGGACTGGACAGAGAACCCTGAGCCCTTCAATGCC	2340
Db	2442	CGAGTCTTCCCCAACAAGGCAGCTGAGGACTGGACAGAGAACCCTGAGCCCTTCAATGCC	2501
Qy	2341	AGCTTCTACCGCCGAGCCTGGATAACCACGGTTATGTCTTCAAGCCCCACACCAGGAT	2400
Db	2502	AGCTTCTACCGCCGAGCCTGGATAACCACGGTTATGTCTTCAAGCCCCACACCAGGAT	2561
Qy	2401	GCCCTGTTAAGGCCGCTGGAGCTGGAGAATGACACTGTGGGCATCCTCGTCAGCACAGCT	2460
Db	2562	GCCCTGTTAAGGCCGCTGGAGCTGGAGAATGACACTGTGGGCATCCTCGTCAGCACAGCT	2621
Qy	2461	GTGGAGCTCAGCCTAGGCAGGCGCACACTGAGGCCAGCAGTGGTGGGCGTCAAGCTGGAC	2520
Db	2622	GTGGAGCTCAGCCTAGGCAGGCGCACACTGAGGCCAGCAGTGGTGGGCGTCAAGCTGGAC	2681
Qy	2521	CTAGAGGCTTGGGCTGAGAAGTTCAAGGTGCTAGCCAGCAACCGTACCCACCAAGACCAG	2580
Db	2682	CTAGAGGCTTGGGCTGAGAAGTTCAAGGTGCTAGCCAGCAACCGTACCCACCAAGACCAG	2741
Qy	2581	CCTCAGAAGTGCGGCCCAACAGCCACTGTGAGATGGACTGCGAGGTTAACAATGAGGAC	2640
Db	2742	CCTCAGAAGTGCGGCCCAACAGCCACTGTGAGATGGACTGCGAGGTTAACAATGAGGAC	2801
Qy	2641	TTACTCTGTGTCCTCATTGATGATGGAGGATTCTGGTGCTGTCAAACCAGAACCATCAG	2700

Db 2802 TTACTCTGTGTCCTCATTGATGATGGAGGATTCTGGTGCTGTCAAACCAGAACCATCAG 2861
 Qy 2701 TGGGACCAGGTGGGCAGGTTCTTCAGTGAGGTGGATGCCAACCTGATGCTGGCACTCTAC 2760
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 2862 TGGGACCAGGTGGGCAGGTTCTTCAGTGAGGTGGATGCCAACCTGATGCTGGCACTCTAC 2921
 Qy 2761 AATAACTCCTTCTACACCCGCAAGGAGTCTATGACTATCAGGCAGCCTGTGCCCCCTCAG 2820
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 2922 AATAACTCCTTCTACACCCGCAAGGAGTCTATGACTATCAGGCAGCCTGTGCCCCCTCAG 2981
 Qy 2821 CCCCCTGGCAACCTGGGTGCTGCACCCCGGGGTGTCTTTGTGCCCACCGTTGCAGATTTT 2880
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 2982 CCCCCTGGCAACCTGGGTGCTGCACCCCGGGGTGTCTTTGTGCCCACCGTTGCAGATTTT 3041
 Qy 2881 CTTAACCTGGCCTGGTGGACCTCTGCTGCCGCCTGGTCCCTGTTCCAGCAGCTTCTCTAC 2940
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 3042 CTTAACCTGGCCTGGTGGACCTCTGCTGCCGCCTGGTCCCTGTTCCAGCAGCTTCTCTAC 3101
 Qy 2941 GGCCTCATCTACCACAGCTGGTTCCAAGCAGACCCCGCGGAGGCCGAGGGGAGCCCCGAG 3000
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 3102 GGCCTCATCTACCACAGCTGGTTCCAAGCAGACCCCGCGGAGGCCGAGGGGAGCCCCGAG 3161
 Qy 3001 ACGCGCGAGAGCAGCTGCGTCATGAAACAGACCCAGTACTACTTCGGCTCGGTAAACGCC 3060
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 3162 ACGCGCGAGAGCAGCTGCGTCATGAAACAGACCCAGTACTACTTCGGCTCGGTAAACGCC 3221
 Qy 3061 TCCTACAACGCCATCATCGACTGCGGAAACTGCTCCAGGCTGTTCCACGCGCAGAGACTG 3120
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 3222 TCCTACAACGCCATCATCGACTGCGGAAACTGCTCCAGGCTGTTCCACGCGCAGAGACTG 3281
 Qy 3121 ACCAACACCAATCTTCTCTTTGTGGTGGCCGAGAAGCCGCTGTGCAGCCAGTGCAGGGCT 3180
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 3282 ACCAACACCAATCTTCTCTTTGTGGTGGCCGAGAAGCCGCTGTGCAGCCAGTGCAGGGCT 3341
 Qy 3181 GGCCGGCTGCTGCAGAAGGAGACGCACTGCCCAGCGGACGGCCCGGAGCAGTGTGAGCTA 3240
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 Db 3342 GGCCGGCTGCTGCAGAAGGAGACGCACTGCCCAGCGGACGGCCCGGAGCAGTGTGAGCTA 3401
 Qy 3241 GTGCAGAGACCGCGATACCGGAGAGGCCCGCACATCTGCTTCGACTACAACGCGACAGAA 3300
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 Db 3402 GTGCAGAGACCGCGATACCGGAGAGGCCCGCACATCTGCTTCGACTACAACGCGACAGAA 3461
 Qy 3301 GATACCTCAGACTGTGGCCGCGGGGCC 3327
 ||||||||||||||||||||||||||||
 Db 3462 GATACCTCAGACTGTGGCCGCGGGGCC 3488